



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/690,151	10/17/2000	Bradley Engstrand	MOT-P-00-001	2732

7590 05/25/2004

Patent + TMS  
A Professional Corporation  
1914 N Milwaukee Avenue  
Third Floor  
Chicago, IL 60647

EXAMINER

LUU, THANH X

ART UNIT

PAPER NUMBER

2878

DATE MAILED: 05/25/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Offic Action Summary</b>	Application N .	Applicant(s)
	09/690,151	ENGSTRAND, BRADLEY
	Examiner Thanh X Luu	Art Unit 2878

— The MAILING DATE of this communication appears on the cover sheet with the correspondence address —  
Peri d for Reply

**A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.**

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) Responsive to communication(s) filed on 26 April 2004.
- 2a) This action is **FINAL**.      2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

- 4) Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-22 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) The proposed drawing correction filed on \_\_\_\_\_ is: a) approved b) disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) All b) Some \* c) None of:
  1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.
- 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) The translation of the foreign language provisional application has been received.
- 15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

1) <input type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____	6) <input type="checkbox"/> Other: _____

## DETAILED ACTION

This Office Action is in response to amendments and remarks filed April 26, 2004. Claims 1-22 are currently pending.

### ***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 17-22 are rejected under 35 U.S.C. 112, first paragraph, as based on a disclosure which is not enabling. A second light source on the second end or a second sensor on the first end is critical or essential to the practice of the invention, but not included in the claim(s) is not enabled by the disclosure. See *In re Mayhew*, 527 F.2d 1229, 188 USPQ 356 (CCPA 1976). At present, Applicant has claimed an inoperative device. The light source on the first end does not emit light such that the sensor on the second end detects the emitted light. On the contrary (see Fig. 1), the sensor on second end detects light from another light source on the same second end. Thus, Applicant has left out an essential component of the invention in the claims.

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1-10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claims 1-10, "light" lacks proper antecedent basis. Further, it is unclear where the light being detected comes from.

In claim 9, it is unclear how the light source is on the first wall (in claim 1) and the light source is also attached at the second wall.

In claims 17-22, it is unclear in its given context how the shaft element moves away from the second end (right side of Fig. 1) if the shaft element is always at the second end. If the left side (of Fig. 1) is construed as the second end, it is unclear how a shaft element is moved towards the first end if the shaft element is already at the first end. Also, "light" and "reflected light" lacks proper antecedent basis. It is also unclear where the reflected light comes from.

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claim 1, as understood, is rejected under 35 U.S.C. 102(b) as being anticipated by Fox et al. (U.S. Patent 5,705,742).

Regarding claim 1, Fox et al. disclose (see Figures 1 and 8) an apparatus for measuring displacement, comprising: a machine element (9) having a body (see Figure 2) defining an interior wherein the body has an interior surface and a length defined between a first end and a second end; a first wall (9) at the first end; a second wall at the second end substantially enclosing the interior; a shaft element (at 45) movable

within the machine element; a head element (valve 45) attached to the shaft element adjacent to the interior surface of the machine element; a light source (laser) on the first wall of the machine element; and a sensor (within 84, not shown) on a wall (9, the same wall) parallel to the first wall and positioned to detect intensity of light within the machine element wherein the intensity of light corresponds to a position of the head element within the machine element at any point between the first end and the second end.

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 2, 3 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fox et al. in view of Smietana (U.S. Patent 5,231,959).

Regarding claims 2, 3 and 10, Fox et al. disclose the claimed invention as set forth above. Fox et al. do not specifically disclose a coating on the shaft element, head element or the interior surface. Smietana teaches (see column 3, lines 15-20) a coating on a shaft element, head element and interior wall of a machine element. Smietana further recognizes that such coatings prevent galling or provides for a more resilient surface. Thus, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide the coatings as claimed in the apparatus of Fox et al. in view of Smietana to prevent galling or to provide elements that are more resilient to wear.

9. Claims 4 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fox et al. in view of Lowi, Jr. (U.S. Patent 5,799,629), hereinafter, Lowi.

Regarding claim 4, Fox et al. disclose the claimed invention as set forth above. Fox et al. do not specifically disclose a seal around the shaft. Lowi teaches (see Figure 1) providing a seal (30) at an end wall. Thus, Lowi recognizes that seals help isolate the interior of the machine element from the exterior. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide a seal as claimed in the apparatus of Fox et al. in view of Lowi to seal the interior of the machine element from dirt and particles, and thereby improve the operation of the device.

Regarding claim 6, Fox et al. disclose the claimed invention as set forth above. Fox et al. do not specifically disclose a brush. Lowi teaches (see Figure 6) a brush (77) attached to the machine element. Lowi recognizes that brushes help clean the shaft in the machine element. Thus, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide brushes in the apparatus of Fox et al. in view of Lowi to clean the shaft element of the machine element and improve the operation of the device.

10. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fox et al. in view of Lowi, and further in view of Brunet et al. (U.S. Patent 6,170,573).

Regarding claim 7, Fox et al. in view of Lowi disclose the claimed invention as set forth above. Fox et al. and Lowi do not specifically disclose a wire brush. Brunet et al. teach (see column 10, lines 45-60) a wire brush for cleaning a machine element.

Thus, Brunet et al. recognize that wire brushes are cost effective in cleaning machine

elements. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide a wire brush in the apparatus of Fox et al. in view of Lowi and Brunet et al. to more effectively clean the device.

11. Claims 5 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fox et al.

Regarding claims 5 and 8, Fox et al. disclose the claimed invention as set forth above. Fox et al. do not specifically disclose a second light source or sensor. However, it has been held that a mere duplication of parts has no patentable significance. *In re Harza*; 104 USPQ 378. Thus, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide a second light source or sensor attached at the first or second wall of Fox et al. to provide additional illumination and detection to improve detection.

12. Claims 11-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Algers et al. (U.S. Patent 6,058,776).

Regarding claims 11-14, Algers et al. disclose (see Figure 1) an apparatus for cleaning a machine component, comprising: a machine element having a body defining an interior wherein the body has a length defined between a first end (at 15) and a second end (at 9) wherein the first end a wall (at wall of seal) having an opening and further wherein the wall has a surface which is exterior to the machine element; a shaft element (6) which is moved within the machine element wherein the shaft element extends through the opening in the wall; a head element (16) within the interior of the machine element wherein the head element is attached to the shaft element; and a first

brush (see column 2, lines 53-55) positioned on the surface of the wall wherein the first brush is exterior to the machine element and contacts the shaft element. Algers et al. also disclose (see Figure 1) a seal (4) disposed around the shaft and a coating (5) on the shaft element. Algers et al. also disclose a brush ring, which would inherently include a second brush. Algers et al. do not specifically disclose the brush on the exterior wall. However, Algers do teach the brush combined with the sealing ring (4). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide the brush exterior to the machine element in the apparatus of Algers et al. to scrap particles outside the machine element in order to prevent the machine element from fouling and eventually clogging the device.

13. Claims 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Algers et al. in view of Fox et al.

Regarding claims 15 and 16, Algers et al. disclose the claimed invention as set forth above. Algers et al. do not specifically disclose a light source and sensor as claimed. Fox et al. teaches attaching a light source and sensor to measure a displacement of a head element. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide a light source and sensor as claimed in the apparatus of Algers et al. in view of Fox et al. to verify correct operation of the machine element by monitoring the position of the head element.

#### ***Response to Arguments***

14. Applicant's arguments filed April 26, 2004 have been fully considered but they are not persuasive.

Applicant asserts that Fox et al. do not disclose the sensor on a wall parallel to the first wall. Examiner disagrees. Since the sensor and light source are disposed on the same first wall (9), as understood, the wall is parallel to itself and thus, the language of the claim is met.

Applicant also asserts that Algers does not disclose a brush exterior to the machine element. Examiner agrees. However, Applicant has failed to rebut the obviousness rejection that one of ordinary skill in the art would have known to dispose the brush exterior to the machine element to prevent any dirt from being brushed into the interior of the machine element which would eventually cause fouling and clogging of the device.

Thus, as set forth above, this rejection is proper.

***Conclusion***

15. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

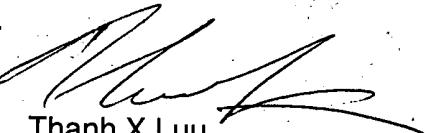
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thanh X Luu whose telephone number is (571) 272-2441. The examiner can normally be reached on M-F (6:30-4:00) First Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Porta can be reached on (571) 272-2444. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Thanh X Luu  
Primary Examiner  
Art Unit 2878

05/04